

Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application:

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1. (currently amended) A helical antenna configured to broadcast a signal from an input line having shielding, comprising:
 - a) a base plate, operatively interconnected to the shielding of the input line;
 - b) a substantially solid dielectric rod, mounted on the base plate;
 - c) a single, unidirectional conductive helix, surrounding wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
 - d) a matching network, connected to the conductive helix, configured to match an impedance of the conductive helix with an impedance of the input signal.
 2. (original) A helical antenna as in claim 1, wherein the dielectric rod is an acetal resin rod.
 3. (original) A helical antenna as in claim 1, wherein the base plate is a conductive base plate.
 4. (canceled) ~~A helical antenna as in claim 3, wherein the base plate is a metal base plate.~~
 5. (original) A helical antenna as in claim 3, wherein the base plate includes a plastic layer between the conductive base plate and the matching network.
 6. (currently amended) A helical antenna as in claim 1, further comprising a dielectric enclosure attached to the base plate ~~that encloses~~ and enclosing the antenna dielectric rod, the conductive helix, and the matching network, wherein the dielectric enclosure enhances an output of the helical antenna ~~output~~.
 7. (currently amended) A helical antenna configured to broadcast a signal from an input line having a core and shielding, comprising:
 - a) a conductive base plate, operatively interconnected to the shielding of the input line;

- b) a substantially solid dielectric rod, mounted on the base plate;
- c) a conductive helix, ~~mounted~~ wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
- d) a tapered strip line matching network, connected ~~to~~ between the core of the input line and the conductive helix, configured to match ~~the~~ an impedance of the conductive helix with ~~the~~ an impedance of the input line.

- 8. (currently amended) A helical antenna as in claim 7, wherein ~~the~~ a length of the tapered strip line matching network is $\frac{1}{4}$ of ~~the signal~~ a wavelength of the signal.
- 9. (currently amended) A helical antenna as in claim 7, wherein a length side of the tapered strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod.
- 10. (currently amended) A helical antenna as in claim 7, wherein the tapered strip line matching network provides a substantially flat transmission response over a spectrum of frequencies
- 11. (currently amended) A helical antenna as in claim 7, wherein the dielectric rod is of materials selected from the group consisting of an acetal resin, acrylic, and nylon ~~rod mounted on the base plate~~.
- 12. (currently amended) A directional antenna as in claim ~~13~~ 11, wherein the acetal resin dielectric rod is Delrin.
- 13. (canceled) ~~A directional antenna as in claim 7, wherein the dielectric rod is nylon.~~
- 14. (original) A directional antenna as in claim 7, wherein the number of turns of the conductive helix is selected from the group consisting of 5, 10 and 15 turns.

15. (currently amended) A directional antenna configured to broadcast a signal from an input line having a core and shielding, comprising:

- a) a conductive base plate, operatively interconnected to the shielding of the input line;
- b) an substantially solid, cylindrical dielectric rod, mounted on the base plate;
- c) a single, unidirectional conductive helix, ~~mounted on~~ wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
- d) a strip line matching network, attached to between the core of the input line and the conductive helix, which tapers from a maximum width at a the connection point on a ~~coaxial cable~~ the input line to a minimum width at a connection point with the conductive helix, wherein the matching network is configured to match ~~the~~ an impedance of the conductive helix with ~~the~~ an impedance of the input line.

16. (currently amended) A directional antenna as in claim 15, wherein ~~the~~ a length of the strip line matching network is $\frac{1}{4}$ of signal wavelength.

17. (currently amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod.

18. (currently amended) A directional antenna as in claim 15, wherein the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod, and forms a triangularly shaped matching network.

19. (currently amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to ~~the circumference~~ the shape of a curved side of the dielectric rod, and forms a crescent shaped matching network.

20. (original) A directional antenna as in claim 15, wherein the strip line matching network tapers along a linear axis to form a matching network.

21. (currently amended) A directional antenna as in claim 15, wherein the strip line matching network tapers from a maximum width of approximately one radius of the dielectric rod ~~down~~ to a minimum width approximately equal to a diameter of wire forming the ~~helical~~ antenna helix.
22. (new) A helical antenna as in claim 7, wherein the matching network is substantially parallel to the base plate.
23. (new) A helical antenna as in claim 7, wherein the matching network is configured to match a higher impedance of the conductive helix with a lower impedance of the input line.
- Q3 24. (new) A helical antenna as in claim 7, wherein the conductive helix comprises a single, unidirectional helix.
- cut 25. (new) A directional antenna as in claim 15, wherein the matching network is substantially parallel to the base plate.
26. (new) A directional antenna as in claim 15, wherein the matching network is configured to match a higher impedance of the conductive helix with a lower impedance of the input line.
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